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EXAMINER

FORD, GRANT M

ART UNIT

PAPER NUMBER

2141

MAIL DATE

DELIVERY MODE

08/06/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/606,636	Applicant(s) ROTHMAN ET AL.	
	Examiner GRANT FORD	Art Unit 2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-15 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-15,27-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/22/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 4/22/2008 have been fully considered but they are not persuasive. Applicant argued that –

(A) The Examiner has failed to make a prima facie showing of obviousness in view of the alleged lack of explicit recitation of predictability/expectation of success of the prior art combination.

2. As to point (A), Applicant argued that the Examiner has failed to make a prima facie showing of obviousness under the USPTO Examination Guidelines for Determining Obviousness in view of KSR (Fed. Register, Vol. 72, No. 195). Applicant alleges that "*These KSR Guidelines enumerate permissible rationale and the findings of fact that must be made under the particular rationale.*" While the KSR Guidelines provide a non-exhaustive listing of exemplary rationales, the USPTO Examination Guidelines for Determining Obviousness in view of KSR explicitly states "*These guidelines do not constitute substantive rule making and hence do not have the force and effect of law. They have been developed as a matter of internal Office management and are not intended to create any right or benefit, substantive or procedural, enforceable by any party against the Office. Rejections will continue to be based upon the substantive law, and it is these rejections that are appealable. Consequently, any failure by Office personnel to follow the guidelines is neither appealable nor petitionable.*" The Examiner notes that again, Applicant appears to be attempting to limit the Office's conclusion of obviousness to a non-

exhaustive list of exemplary rationales, of which Applicant's analysis is contrary to the conclusion of obviousness found in the Office Action dated 4/22/2008 (as well as the Final Rejection dated 7/25/2008). For at least this reason, Applicant's arguments are not found to be persuasive.

3. Applicant's allegations that:

(1) *"If a combination or modification to a reference is used, an Examiner must show that there is an expectation of success that the combination or modification proffered would predictably result in the claimed invention."*; and

(2) *"Thus, the burden still remains on the Examiner to demonstrate each prong of the three-part test: (1) that each and every element is taught; (2) that one skilled in the art could have combined the references; and (3) that there is predictability/expectation of success."*, appear to contradict MPEP 706.02(j) by stating that the content of a rejection under 35 USC 103(a) must include a statement showing that there is an expectation of success that the combination or modification would predictably result in the claimed invention.

4. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made, and how the amendments avoid such references or objections. Additionally, the Examiner notes that the Applicant has failed to introduce any evidence that the prior art combination of Chilton in view of Abbondanzio is not predictable or fails to produce an expectation of success. Rather, Applicant merely alleges that *"the Examiner has failed to even address*

the issue of predictability/expectation of success." Additionally, for at least these reasons, Applicant's argument is not found to be persuasive.

5. Nevertheless, MPEP 2143.02 provides that a rationale to support a conclusion that a claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art. The Examiner notes the reasons for combination of the prior art of Chilton with the prior art of Abbondanzio provided in the previous Office Action which states: One of ordinary skill in the art would have done so (i.e., incorporate the use of blade servers in distributed computing systems) for the purpose of permitting hot-swappable expansion of a server system (Abbondanzio Col 1 lines 33-50). This reasoning is furthered by the response to point (C) in the Office Action dated 7/25/2007 which explains that the prior art of Chilton discloses a dynamic ICDA storage system which allows for expansion of storage volumes by the addition of other ICDA units (Chilton, Para. 0011,0043). One of ordinary skill in the art at the time the invention was made would recognize that the storage volume expansion of Chilton could be implemented utilizing the blade server technology of Abbondanzio as cited in the Office Action dated 4/22/2008 with both predictability and an expectation of success.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1,3,and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chilton (US 2002/0124134) in view of Abbondanzio et al. (6,968,414) hereinafter referred to as Abbondanzio, and further in view of Cohn et al. (US 2003/0191908), hereinafter referred to as Cohn.

a. As per claim 1, Chilton discloses method for sharing resources across a plurality of computing platforms, comprising:

receiving a resource access request to access a shared resource at a first computing platform (Para. 0036);

determining a second computing platform via which the shared resource may be accessed (Para. 0036);

sending the resource access request to the second computing platform (Para. 0036);

accessing the shared resource via the second computing platform (Para. 0036). However, Chilton fails to explicitly teach the use of blade servers.

Abbondanzio teaches the use of blade servers in a computing environment (Col 2 lines 3-26). It would have been obvious to one having ordinary skill

in the art at the time the invention was made to incorporate the use of blade servers in distributed computing systems. One of ordinary skill in the art would have done so for the purpose of permitting hot-swappable expansion of a server system with a reasonable expectation of success (Col 1 lines 33-50).

Cohn teaches wherein server blades utilize firmware to perform the communications regarding resource requests and accesses (Abstract, Para. 0040). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of a firmware associated with a processor in a server blade for performing operations. One of ordinary skill in the art would have done so for the purpose of providing a read only memory (ROM) which includes a BIOS and controls operations of a server blade such as communications requesting access to storage, with a reasonable expectation of success (Para. 0040).

b. As per claim 3, Chilton, Abbondanzio, and Cohn teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the method is performed in a manner that is transparent to operation systems running on the plurality of computing platforms (Para. 0038).

c. As per claim 10, Chilton, Abbondanzio, and Cohn teach the invention substantially as claimed above. Additionally, Chilton discloses maintaining global resource mapping data identifying which resources are accessible via which computing platforms (Para. 0035-0036); and

employing the global resource mapping data to determine which computing platform to use to access the shared resource (Para. 0035-0036, 0046).

d. As per claim 11, Chilton, Abbondanzio, and Cohn teach the invention substantially as claimed above. Additionally, Chilton discloses wherein a local copy of the global resource mapping data is maintained on each of the plurality of computing platforms (Para. 0035-0036, 0046).

e. As per claim 12, Chilton, Abbondanzio, and Cohn teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the global resource mapping data is maintained by a central global resource manager (Para. 0032).

f. As per claim 13, Chilton discloses a method comprising:

- configuring the plurality of storage devices as a virtual storage volume (Para. 0034-0036);
- maintaining a global resource map that maps I/O blocks defined for the virtual storage volume to corresponding storage devices that actually host the I/O blocks (Para. 0034-0036);
- receiving a data access request identifying an I/O block from which data are to be accessed via the virtual storage volume (Para. 0036);
- identifying a computing platform via which a target storage device that actually hosts the I/O block may be accessed through the use of the global resource map (Para. 0035-0036);
- routing the data access request to the computing platform that is identified (Para. 0036); and

accessing the I/O block on the target storage device via the computing platform that is identified (Para. 0036). However, Chilton fails to explicitly teach the use of blade servers.

Abbondanzio teaches the use of blade servers in a blade server environment (Col 2 lines 3-26). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of blade servers in distributed computing systems. One of ordinary skill in the art would have done so for the purpose of permitting hot-swappable expansion of a server system with a reasonable expectation of success (Col 1 lines 33-50).

Cohn teaches wherein server blades utilize firmware to perform the communications regarding resource requests and accesses (Abstract, Para. 0040). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of a firmware associated with a processor in a server blade for performing operations. One of ordinary skill in the art would have done so for the purpose of providing a read only memory (ROM) which includes a BIOS and controls operations of a server blade such as communications requesting access to storage, with a reasonable expectation of success (Para. 0040).

g. As per claim 14, Chilton, Abbondanzio, and Cohn teach the invention substantially as claimed above. Additionally, Chilton discloses configuring the plurality of storage devices as at least one RAID virtual storage volume (Para. 0041);

maintaining RAID configuration mapping information that maps I/O blocks defined for said at least one RAID virtual storage volume to corresponding storage devices that actually host the I/O blocks (Para. 0041); and

employing the RAID configuration mapping information to access appropriate storage devices in response to read and write access requests (Para. 0041).

h. As per claim 15, Chilton, Abbondanzio, and Cohn teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the RAID virtual storage volume is configured in accordance with the RAID-1 standard (Para. 0041). The Examiner notes that Chilton functions to operate in accordance with the RAID standard. As RAID-1 is merely a design choice within the RAID standard, Chilton functions to operate in accordance with RAID-1.

8. Claims 5-9 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chilton, Abbondanzio, and Cohn further in view of Hemphill et al. (5,696,895), hereinafter referred to as Hemphill.

a. As per claim 5, Chilton, Abbondanzio, and Cohn teach the invention substantially as claimed above. However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the resource access request is sent to the second computing platform via an out-of-band (OOB) communication channel (Figure 1

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element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

b. As per claim 6, Chilton, Abbondanzio, Cohn, and Hemphill teach the invention substantially as claimed above. However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the OOB communication channel comprises one of a system management bus, an Ethernet-based network, or a serial communication link (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of a serial OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

c. As per claim 7, Chilton, Abbondanzio, Cohn, and Hemphill teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the target resource comprises a storage device (Abstract, Para. 0022).

d. As per claim 8, Chilton, Abbondanzio, Cohn, and Hemphill teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the resource access request comprises a storage device write request (Para. 0010, 0026, 0036) and sending data corresponding to the storage device write request (Para. 0026,

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0036). However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the resource access request is sent to the second computing platform via an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

e. As per claim 9, Chilton, Abbondanzio, Cohn, and Hemphill teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the resource access request comprises a storage device read request (Para. 0010,0026,0036) and the method further comprises:

retrieving data corresponding to the read request from the shared resource (Para. 0036); and

sending the data that are retrieved back to the first computing platform (Para. 0036). However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the resource access request is sent to the second computing platform via an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel

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with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

f. As per claim 27, Chilton discloses receiving a resource access request from an operating system running on a requesting server to access a shared resource hosted by at least one of the plurality of servers (Para. 0036);

determining a target resource host from among the plurality of servers that host a target resource that may service the resource access request (Para. 0036);

sending the resource access request to the target resource host (Para. 0036); and

accessing the target resource via the target resource host to service the resource access request (Para. 0036). However, Chilton fails to explicitly teach the use of an OOB channel or the use of blade servers.

Abbondanzio teaches a chassis including a plurality of slots in which respective server blades may be inserted including an interface plane having a plurality of for mating with connectors on inserted server blades providing communication paths between the plurality of connectors (Figure 3, Col 2 lines 3-26); and a plurality of server blades including a processor and corresponding memory to perform operations (Figure 3, Col 1 lines 33-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of blade servers in distributed computing systems. One of ordinary skill in the art would have been motivated to do so

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for the purpose of permitting hot-swappable expansion of a server system (Col 1 lines 33-50).

Hemphill teaches the use of an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

Cohn teaches wherein server blades utilize a processor an associated firmware executable thereon to perform operations (Abstract, Para. 0040). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of a firmware associated with a processor in a server blade for performing operations. One of ordinary skill in the art would have done so for the purpose of providing a read only memory (ROM) which includes a BIOS for controlling operations of a server blade such as communications requesting access to storage (Para. 0040).

g. As per claim 28, Chilton, Abbondanzio, Cohn, and Hemphill teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the operations are performed in a manner that is transparent to operating systems which are run on the plurality of server blades (Para. 0038).

h. As per claim 29, Chilton, Abbondanzio, Cohn, and Hemphill teach the invention substantially as claimed above. However, Chilton fails to explicitly disclose the

use of an OOB communication channel. Hemphill teaches the use of an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

i. As per claim 30, Chilton, Abbondanzio, Cohn, and Hemphill teach the invention substantially as claimed above. Additionally, Chilton discloses a hidden execution mode (Para. 0036), as operations between ICDA units occur on a separate network from which requests are received. However, Chilton fails to explicitly disclose the use of an OOB communication channel.

Hemphill teaches the use of an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GRANT FORD whose telephone number is (571)272-8630. The examiner can normally be reached on 8-5:30 Mon-Thurs alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. F./

Examiner, Art Unit 2141

/Andrew Caldwell/

Supervisory Patent Examiner, Art Unit 2142